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[4910-13-P]

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2011-1182; Directorate Identifier 2010-SW-010-AD;**

**Amendment 39-16853; AD 2011-23-02]**

**RIN 2120-AA64**

**Airworthiness Directives; Bell Helicopter Textron, Inc. (Bell), Model 205A-1, 205B, 210, and 212 Helicopters**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** This amendment supersedes an existing airworthiness directive (AD) for Bell Model 205B and 212 helicopters with certain main rotor blade (blade) assemblies installed. That AD currently requires washing the upper and lower surfaces of each blade and visually inspecting the grip plates, doublers, and the remaining upper and lower surfaces of the blades in the area between blade stations 24.5 to 40 for an edge void, corrosion, or a crack. This amendment retains the requirements of that AD for the affected part-numbered blades but increases the scope and frequency of the inspections and expands the applicability to include the Model 205A-1 and 210 helicopters, additional blade part numbers, and all helicopter serial numbers for the affected helicopter models. This amendment also requires applying a light coat of preservative oil (C-125) to all surfaces of the blade in addition to the inspection areas as required in the existing AD. This amendment is prompted by an additional report of a fatigue crack on a blade installed on a Model 212 helicopter. The actions specified by this AD are intended to detect an edge void, corrosion, or a crack on a blade, and to prevent loss of a blade and subsequent loss of control of the helicopter.

**DATES:** Effective [insert date 15 days after date of publication in the **Federal Register**].

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of [insert date 15 days after date of publication in the **Federal Register**].

We must receive comments on this AD by [insert date 60 days after date of publication in the Federal Register].

**ADDRESSES:** Use one of the following addresses to comment on this AD.

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

You may get the service information identified in this AD from Bell Helicopter Textron, Inc., P.O. Box 482, Fort Worth, TX 76101, telephone (817) 280-3391, fax (817) 280-6466, or at <http://www.bellcustomer.com/files/>.

**EXAMINING THE DOCKET:** You may examine the docket that contains the AD, any comments, and other information on the Internet at <http://www.regulations.gov>, or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Operations office (telephone (800) 647-5527) is located in Room W12-140 on the ground floor of the West Building at the street address stated in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Michael Kohner, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Rotorcraft Certification Office, 2601 Meacham Blvd., Fort Worth, Texas 76137, telephone (817) 222-5170, fax (817) 222-5783.

**SUPPLEMENTARY INFORMATION:** On December 21, 2009, we issued AD 2010-03-03, Amendment 39-16186 (75 FR 5681, February 4, 2010), to require at specified intervals washing the upper and lower surfaces of each blade and visually inspecting the grip plates, doublers, and the remaining upper and lower surfaces of the blades in the area from blade stations 24.5 to 40 for an edge void, corrosion, or a crack

using a 3x power or higher magnifying glass. That AD was prompted by two reports of fatigue cracks on blades installed on Model 212 helicopters. The cause of the cracks has been attributed to inadequate adhesive bonding during manufacture in the area between the grip plate and mating doubler surface. A crack first appears in the grip plate, which can be detected visually with the blade installed on the helicopter. That condition, if not detected, could result in loss of a blade and subsequent loss of control of the helicopter.

Since issuing AD 2010-03-03 (75 FR 5681, February 4, 2010), we have received another report of a fatigue crack on a blade installed on a Model 212 helicopter. The crack at the blade attachment bolt hole has been attributed to a large disbond, which developed in the adhesive between the lower grip plate and mating doubler. The lower grip plate was not cracked. The disbond initiated at the tip of the grip plate and propagated to the blade attachment bolt hole. Corrosion was found on the doubler suggesting an edge void was present for an extended amount of time and went undetected by the inspections being performed by the operator. Further analysis and investigation by the manufacturer have revealed that the inspections on the blade as required by the current AD need to be expanded and performed at an increased frequency and on additional part-numbered blades of similar design and manufacture, which can also be installed on the Model 210 and 212 helicopters.

We have also determined that blade part numbers listed in the current AD may also be installed on Model 205A-1 helicopters modified in accordance with Supplemental Type Certificate (STC) No. SH5132NM or SH5976NM. The affected blade can also be installed on all helicopter serial numbers for the affected helicopter models. Therefore, this amendment retains the same requirements as AD 2010-03-03 (75 FR 5681, February 4, 2010) for the affected part-numbered blades but increases the scope and frequency of the inspections and expands the applicability to include the Model 205A-1 and 210 helicopters, additional blade part numbers, and all helicopter serial numbers for the affected helicopter models. Finally, after further investigation, we discovered the requirement of the current AD to apply the oil only to the specified inspection areas was not the original intent of the AD. Therefore, this AD also requires applying a light coat of preservative oil (C-125) to all surfaces of the blade to prevent corrosion from the

process of washing the blade surfaces in preparation for the inspections in addition to those areas as required in the current AD.

We have reviewed Bell Helicopter Alert Service Bulletin (ASB) No. 205B-08-51 and ASB No. 212-08-130, both Revision B and dated January 11, 2011, applicable to Model 205B and Model 212 helicopters, respectively, and ASB No. 210-08-03, Revision B, dated January 10, 2011, applicable to Model 210 helicopters, which describe procedures for initial and repetitive inspections of certain part-numbered blades on certain serial-numbered helicopters for signs of an edge void, corrosion, or a crack, including a hair-line crack in the blade paint finish in the inspection area as shown in Figure 1 of the ASBs between blade stations 24.5 and 85.

This AD differs from the ASBs as follows:

- We specifically require only wiping each of the bond lines at the edges of both grip plates and each of the layered doublers (bond lines) on the upper and lower surfaces of each affected blade with an alcohol-soaked cloth. This is required immediately before performing a visual inspection using a 3x or higher magnifying glass and a bright light to detect an edge delamination along any of the bond lines. This was done to avoid any possible confusion with having to wipe the entire surface blade area from blade station 24.5 to 85, which could make performing a reliable inspection difficult. The ASBs state to “wipe the area to be inspected with an alcohol-soaked cloth.”

- The ASBs use the phrase “bond lines between doublers, grip plates, and skin” to describe the bond lines, and we use “bond lines at the edges of both grip plates and each of the layer doublers.”

- The ASBs use the phrase “cracks in the bond lines between doublers or grip plates” to describe a separation of the doubler or grip plate along an edge, and we use the term “edge delamination.”

- We do not specify each helicopter serial number (S/N) in our AD; the ASBs do specify the helicopter S/Ns.

Since an unsafe condition has been identified that is likely to exist or develop on other helicopters of these same type designs, this AD supersedes AD 2010-03-03 (75 FR 5681, February 4, 2010), retaining the same requirements for the affected part-numbered blades but increasing the scope and frequency of the inspections and expanding the

applicability to include the Model 205A-1 and 210 helicopters, additional blade part numbers, and all helicopter serial numbers for the affected helicopter models.

The short compliance time involved is required because the previously described critical unsafe condition can adversely affect the structural integrity and controllability of the helicopter. Therefore, the AD must be issued immediately to require the following actions within 25 hours time-in-service (TIS) and thereafter at intervals not to exceed 25 hours TIS:

- Washing the upper and lower blade surfaces using a solution of cleaning compound (C-318) and water.
- Visually inspecting each of the upper and lower grip plates and doublers of the blade for their entire length and chord width for an edge void, any corrosion, or a crack.
- Wiping each of the bond lines at the edges of both grip plates and each of the layered doublers (bond lines) on the upper and lower surfaces of each affected blade with an alcohol-soaked cloth (C-385) in the area from blade stations 24.5 to 85.
- Immediately thereafter, using a 3x power or higher magnifying glass and a bright light, visually inspecting each of the bond lines on the upper and lower surfaces of the blade in the inspection area for any edge delamination, as indicated by a dark line located along any bond line, or a crack in the paint finish.
- Applying a light coat of preservative oil (C-125) to all surfaces of the blade.
- Removing paint from areas in which an edge delamination along any bond line of a grip plate or doubler, or a crack in the blade paint finish is discovered, by sanding with 180-220 grit paper to determine if an edge void or a crack exists in the blade.
- Replacing any blade that has a crack in any grip plate or doubler with an airworthy blade.
- Replacing any blade that has an edge void or any corrosion with an airworthy blade or repairing the blade if the damage is within the maximum repair damage limits. The maximum repair damage limitations are contained in the applicable Component and Repair Overhaul Manual.
- Replacing any blade that has a crack in the blade skin with an airworthy blade, or repairing the blade if the damage is within the maximum repair damage limits.

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable and that good cause exists for making this amendment effective in less than 30 days.

We estimate that this AD will affect 132 helicopters in the U.S. registry. We also estimate that washing and visually inspecting each blade will take about 1 work hour. If an edge void, corrosion, or a crack is found, replacing a blade with an airworthy blade will take about 24 work hours. The average labor rate is \$85 per work hour. Required parts will cost about \$85,597 for a replacement blade. Based on these figures, we estimate the total cost of the AD on U.S. operators to be \$356,917, assuming that 24 inspections are done each year on each helicopter and that 1 blade is replaced.

### **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and an opportunity for public comment. We invite you to send any written relevant data, views, or arguments regarding this AD. Send your comments to an address listed under the ADDRESSES section. Include the docket number “FAA-2011-1182; Directorate Identifier 2010-SW-010-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the AD. We will consider all comments received by the closing date and may amend the AD in light of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive concerning this AD. Using the search function of the docket web site, you can find and read the comments to any of our dockets, including the name of the individual who sent the comment. You may review the DOT’s complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78).

### **Regulatory Findings**

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the regulation:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared an economic evaluation of the estimated costs to comply with this AD. See the AD docket to examine the economic evaluation.

#### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2010-03-03; Amendment 39-16186 (75 FR 5681, February 4, 2010), and by adding a new AD to read as follows:

2011-23-02 **BELL HELICOPTER TEXTRON, INC.:** Amendment 39-16853; Docket No. FAA-2011-1182; Directorate Identifier 2010-SW-010-AD. Supersedes AD 2010-03-03, Amendment 39-16186 (75 FR 5681, February 4, 2010), Docket No. FAA-2010-0065, Directorate Identifier 2009-SW-01-AD.

**Applicability:** Model 205A-1, 205B, 210 and 212 helicopters with a main rotor blade (blade), part number (P/N) 204-012-001-023 or -033; 210-015-001-101; 212-015-501-005, -111, -113, -115, -117, -119, or -121, installed, certificated in any category.

Note 1: Bell Helicopter Model 205A-1 helicopters, modified by Supplemental Type Certificate (STC) No. SH5132NM or SH5976NM, may have affected part-numbered blades installed.

**Compliance:** Required as indicated.

To detect an edge void, corrosion, or a crack on a blade, to prevent the loss of a blade and subsequent loss of control of the helicopter, do the following:

(a) Within 25 hours time-in-service (TIS), unless accomplished previously, and thereafter at intervals not to exceed 25 hours TIS:

(1) Wash the upper and lower surfaces of each affected blade with a solution of cleaning compound (C-318) and water. Rinse thoroughly and wipe dry.

(2) Visually inspect each of the upper and lower grip plates and doublers of the blade for their entire length and chord width for an edge void, any corrosion, or a crack. Pay particular attention to any crack in the paint finish near or at a bond line that follows the outline of a grip plate or doubler.

Note 2: The inspections required by paragraphs (a)(2) and (a)(4) of this AD do not require removal of the blades from the main rotor hub and can be accomplished while the blades are installed on the helicopter.

(3) Wipe each of the bond lines at the edges of both grip plates and each of the layered doublers (bond lines) on the upper and lower surfaces of each affected blade with



an alcohol-soaked cloth (C-385) in the area from blade stations 24.5 to 85 (inspection area) as depicted in Figure 1 of Bell Helicopter Alert Service Bulletin (ASB) No. 205B-08-51 for the Model 205B helicopters or ASB No. 212-08-130 for the Model 212 helicopters (and the Model 205A-1 helicopters), both Revision B, and both dated January 11, 2011; or ASB No. 210-08-03, Revision B, dated January 10, 2011, for the Model 210 helicopters, as appropriate for your model helicopter. Wipe dry with a clean cloth.

(4) Immediately after accomplishing paragraph (a)(3) of this AD, using a 3x power or higher magnifying glass and a bright light, visually inspect each of the bond lines on the upper and lower surfaces of the blade in the inspection area for any edge delamination, as indicated by a dark line located along any bond line, or a crack in the paint finish. An edge delamination is defined as a separation of the detail parts along an edge.

Note 3: An edge delamination along the edge of a grip plate or doubler, or "any potential cracks in the bond lines between doublers or grip plates" as described in the ASBs, is indicated by the presence of excess alcohol bleeding out of an edge void. The excess alcohol in the void will appear as a dark line along the bond line. A crack in the paint finish which follows the outline of a grip plate or doubler may indicate a possible edge void.

(5) If there is no edge void, corrosion, crack, an edge delamination, or a crack in the paint finish, apply a light coat of preservative oil (C-125) to all surfaces of the blade.

(b) Before further flight:

(1) If there is any edge delamination along any bond line of a grip plate or doubler, or a crack in the paint finish:

(i) Remove the paint in the affected area by lightly sanding with 180-220 grit paper in a span-wise direction to determine if there is an edge void, or if the grip plate, doubler, or skin is cracked. If any parent material is removed during the sanding operation, replace the blade with an airworthy blade or repair the blade if the amount of parent material removed is within the maximum repair damage limits.

Note 4: The maximum repair damage limits are contained in the applicable Component and Repair Overhaul Manual.

(ii) If there is an edge void, determine the depth and length using a .0015 inch feeler gauge.

(iii) If there is an edge void in a grip plate or doubler near the outboard tip, tap inspect the affected area to determine the size and shape of the void.

(iv) Repair the blade if the edge void is within the maximum repair damage limits or replace the blade with an airworthy blade.

(v) If there is not an edge void or a crack, refinish the sanded area.

(2) If there is a crack in any grip plate or doubler, replace the blade with an airworthy blade.

(3) If there is a crack in the blade skin, replace the blade with an airworthy blade, or repair the blade if the damage is within the maximum repair damage limits.

(4) If there is any corrosion, replace the blade with an airworthy blade or repair the blade if the damage is within the maximum repair damage limits.

(c) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Contact the Manager, Rotorcraft Certification Office, ATTN: Michael Kohner, Aviation Safety Engineer, FAA, Rotorcraft Directorate, 2601 Meacham Blvd., Fort Worth, Texas 76137, telephone (817) 222-5170, fax (817) 222-5783, for information about previously approved alternative methods of compliance.

(d) The inspection area is depicted in Figure 1 of Bell Helicopter Alert Service Bulletin No. 205B-08-51 or No. 212-08-130, both Revision B, and both dated January 11, 2011; or No. 210-08-03, Revision B, dated January 10, 2011. The incorporation by reference of these documents was approved by the Director of the Federal Register, in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Bell Helicopter Textron, Inc., P.O. Box 482, Fort Worth, TX 76101, telephone (817) 280-3391, fax (817) 280-6466, or at <http://www.bellcustomer.com/files/>. Copies may be inspected at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

[http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

**Joint Aircraft System/Component (JASC) Code**

(e) The JASC Code is 6210: Main Rotor Blades.

(f) This amendment becomes effective on [insert date 15 days after date of publication in the **Federal Register**].

Issued in Fort Worth, Texas, on October 21, 2011.

Lance T. Gant,

Acting Manager, Rotorcraft Directorate,  
Aircraft Certification Service.

[FR Doc. 2011-28355 Filed 11/03/2011 at 8:45 am; Publication Date: 11/04/2011]